

Projects

The Project

- ❑ Students can work in groups on the project
- ❑ Maximum two students can join one group
- ❑ Project grade is 40%
- ❑ Groups have to be formed within one week. Please send me the team members and the project title by 31.12.2024
- ❑ Final submission of the project includes:
 - ❑ Report of the test cases and the achieved results
 - ❑ Project code with documentation
 - ❑ Presentation video
- ❑ Deadline: 31.01.2025
- ❑ In case the student could not submit the project, then he/she has to pass the final exam

1- Bar-Code Detection and Decoding

The idea behind this project is simple. One must make a computer locate that area in an image with maximum contours. You will first need to convert the image into grayscale to get started. After that, use image processing methods like gradient calculation, blur image, binary thresholding, morphology, etc., and finally find the area with the highest number of contours. Then, label the area as a barcode. Additionally, you can decode the barcode to identify the number represented by this barcode.

You might need to pre-process the image to adjust the orientation and enhance the image quality.



2 - Questionnaire Analysis

In this project you can design the questionnaire template, print some samples, fill them manually with pen, scan and save them in your computer.

Implement a software to load the scanned papers, detect the answer for each question by detecting the marked option. At the end the software will output the id for each question and the chosen answer automatically.

You might need to pre-process the image to adjust the orientation and enhance the image quality.

Please rate each metric

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Education will help me to get a good job in future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I need to work very hard to go to a national school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents encourage me to work hard in my studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My father and mother live harmoniously	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents are able to pay for my further education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents attend all meetings whenever they are called by the school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The community around supports building of classrooms, library, toilets etc	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our teachers encourage us to work hard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our teachers are never absent without a good reason	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our teachers always make sure we understand the lesson	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How far is your home from school?

- ☐ Less than 1km
- ☐ About 1 - 2 kms away
- ☐ About 3 - 4 kms away
- ☐ 5 or more kms away

How often do you come late to school?

- ☐ I never come late
- ☐ About once a week
- ☐ More than once a week
- ☐ Almost everyday

How often are you absent from school?

- ☐ Never
- ☐ About once a week
- ☐ More than once a week
- ☐ Almost everyday

Do you find time to do your studies at home?

- ☐ I don't have any time
- ☐ Only about 1 to 2 hours
- ☐ More than 3 hours